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PSYCHIATRIC STUDIES OF DELINQUENTS.

PART II. A STUDY OF PHYSICAL AND MENTAL CONDITIONS OF 100 DELINQUENT WHITE WOMEN IN LOUISVILLE, KY.

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(EDITORIAL NOTE.—Part I, A Psychiatric Study of Delinquent Women in Lansing, Kans., was published in Public Health Reports for May 21, 1920.)

The work represented by the following report was undertaken by direction of the Surgeon General of the United States Public Health Service, under authority of the Chamberlain-Kahn Act of July 9, 1918. The investigation was carried on during the months of March and April, 1919, in the city of Louisville, Ky., in connection with the activities of the division of venereal diseases, United States Public Health Service, for the control of venereal diseases in the extra-cantonment civil health zone about Camp Taylor.

Most of the subjects examined were inmates of the Jefferson County, Ky., jail; a few, perhaps 10 per cent, were from other institutions in Louisville, such as the Union Gospel Mission, the City Hospital, and the Home for the Friendless. However, it is neither possible nor advisable to separate this latter number into a distinct group, since some of the women had been transferred from the jail, and others were in these institutions for conduct similar to that which had caused the incarceration of many jail inmates.

Immediate treatment and general oversight of venereal disease cases in these institutions were under the direction of the jail physician of the Jefferson County Jail, who was also a medical officer of the United States Public Health Service, assisted by a Public Health Service nurse.

The laboratory work in connection with these cases was performed at the Louisville City Hospital Laboratory, in charge of the director of the laboratory, a medical officer of the Public Health Service.

The sociological records, which were as full as possible in each case, were obtained from the matron of the Louisville city police court, whose duty it was to obtain such information for use in court, in connection with the trial of cases and in the subsequent disposal of the subjects. Similar data were collected in the cases of those women not arrested but detained in quarantine as persons likely to have a venereal disease and conducting themselves in such a manner as probably to lead to its dissemination.

Women arrested on charges involving sexual immorality were usually at once placed under quarantine, in order that they might be held pending the receipt of the laboratory report upon which their further disposition depended, so far as the venereal disease element in the case was concerned. Quarantine was imposed by county or city health officers, under authority of regulations of the State board of health, put into force in June, 1918, and enacted into a city ordinance by the Louisville board of aldermen in July, 1918.

The following general plan was followed in carrying out the investigation: Family histories were obtained from the subjects themselves and depend, therefore, upon the powers of observation and the memory of individual subjects; personal and social history obtained from subjects and frequently supplemented from court records; personal traits, such as mood, energy, general interest, were studied to some degree. Physical examinations, psychometric and psychiatric tests, and laboratory findings were included in the plan of study and are reported in these pages.

Although the examination of women while in detention doubtless eliminates the immediate effects of alcohol and drugs and the fatigue incident to irregular hours, it is undoubtedly true that imprisonment does produce certain subtle mental changes which are often difficult properly to evaluate.

It is believed that this group of women, including, as it does, individuals from the "beginner" class to the older inmate of the formerly licensed house of prostitution, is fairly representative of the sexually immoral women in Louisville. Especially interesting is the fact that the percentage of native-born subjects was relatively high.

1. Family Histories.

Family history includes general information concerning the father, mother, brothers, and sisters, with particular reference to any nervous or mental disorders, alcoholism, drug habituation, and peculiar or unusual reactions to social difficulties. This information was obtained from the subject herself, and it is believed to be approximately correct in practically all instances so far as such history was known to the subject. In many instances it was possible to compare the family history as the subject gave it, with records of the police court matron, and rarely was there found any difference of importance. This relative truthfulness in such a connection is probably explainable on the ground that many of these persons take a rather impersonal and detached viewpoint in regard to their relatives. The lack of feeling thus manifested is believed to be a deep-seated and important defect in make-up on the affective side of such individuals. Occasional failures to give information may be explained by a subject's limited power of observation or by her lack of interest. An attempt to go

into the history of more distant relatives yielded such meager and indefinite information that it was discontinued as being without value.

Parents' birthplace.—The parents of only 3 of the subjects were known by them to be of foreign birth, the parents of 21 were of American origin, but the State in which they were born was not known to the subjects. In 18 instances, the country of their parents' birth was unknown. The largest number, 84, were said to be natives of Kentucky; 23 came from the adjoining State of Indiana. Birthplaces by States, so far as known, were given as follows:

TABLE XIV.—*Parents' birthplace.*

Birthplace.	Fathers.	Mothers.	Birthplace.	Fathers.	Mothers.
Unknown.....	8	10	Indiana.....	10	13
Born in United States, but State unknown.....	14	7	Ohio.....	3	1
Kentucky.....	40	44	Louisiana.....	1	1
Tennessee.....	6	3	Maine.....	1	1
Georgia.....	2	0	West Virginia.....	1	1
Missouri.....	1	3	Pennsylvania.....	1	0
Virginia.....	1	0	Illinois.....	0	1
Texas.....	1	1	Oklahoma.....	0	1
Mississippi.....	0	1	Ireland.....	1	1
Florida.....	0	1	Switzerland.....	0	1
South Carolina.....	0	1	Germany.....	4	2
			England.....	0	1

Parents' education.—Causes given by the subjects in explanation of the relatively high percentage of defective education in the parents were usually poverty, inaccessibility of schools, and "unknown." The large number of instances in which the extent of their parents' education was unknown to the subjects may be traceable to the early death or separation of parents, or to ignorance and lack of interest in matters of education on the part of the subjects themselves. It is safe to assume, however, that the education of these parents was limited. Details ascertained may be indicated thus:

TABLE XV.—*Parents' education.*

Education.	Fathers.	Mothers.
Could not read or write.....	15	9
Could read and write only.....	38	37
Grades attained:		
Third.....	1	0
Fourth.....	1	4
Fifth.....	0	3
Sixth.....	2	2
Seventh.....	0	1
Eighth.....	1	3
Ninth.....	1	5
Entered high school.....	1	4
Completed high school.....	0	1
Entered college.....	2	0
Unknown.....	33	26
	95	95

Parents' occupations.—The following list represents the principal occupations engaged in by the parents of the subjects. In many instances, however, various other occupations had been followed for varying periods of time. The predominance of farming in this list of occupations is natural in a study of an agricultural State. It does not necessarily imply that prostitution is especially common among women originating in rural districts.

TABLE XVI.—*Parents' Occupation.*

Occupation.	Fathers.	Mothers.	Occupation.	Fathers.	Mothers.
Farmers.....	43	72	Railroad car repairer.....	1	.....
Housekeeper.....	.....	.....	Railroad brakeman.....	1	.....
Laborer.....	12	4	Fish peddler.....	1	.....
Factory worker (tobacco).....	2	.....	Bookkeeper.....	1	.....
Carpenter.....	3	.....	Painter.....	1	.....
Seamstress.....	.....	3	Coal miner.....	1	.....
Locomotive engineer.....	3	.....	Machinist.....	1	.....
School-teacher.....	2	2	Rate clerk.....	1	.....
Railroad foremen.....	2	.....	Stationery engineer.....	1	.....
Physician.....	2	.....	River pilot.....	1	.....
Mechanic.....	2	.....	City fireman.....	1	.....
Saloon-keeper.....	1	.....	Brick mason.....	1	.....
Factory worker (wagon).....	1	.....	Motorman (railroad).....	1	.....
Upholsterer.....	1	.....	Blacksmith.....	1	.....
Minister.....	1	.....	Domestic.....	.....	1
Night watchmen.....	1	.....	Milliner.....	.....	1
Shoemaker.....	1	.....	Laundress.....	.....	1
Railroad conductor.....	1	.....	Clerk.....	.....	1
Railroad switchman.....	1	.....	Unknown.....	4	10

Alcoholic habits of parents.—The following table shows the alcoholic habits of the parents:

TABLE XVII.—*Alcoholic habits of parents.*

	Fathers.	Mothers.
Habitually alcoholic.....	31	4
Alcoholic habits unknown.....	21	15
Alcohol used sparingly or not at all.....	43	76

A history of drug habituation was not obtained in the case of a parent of any subject.

Insanity in parents.—A history of definite insanity was obtained in the case of 3 fathers; of convulsions in the case of 3 mothers; repeated losses of consciousness in 6 mothers and 1 father; and unusual "nervousness" in 14 mothers and 11 fathers. This "nervousness" was generally described as consisting of tremulousness, weakness, and pallor, which came on at any unusual event, and lasted usually from a few minutes to a few hours.

It is believed that the above represent only the more marked neurotic and psychotic manifestations, those of lesser degree probably escaping the poor observation of the subjects who gave this information.

Parents' court records.—A history of 7 fathers and 3 mothers having been arrested one or more times was obtained. All arrests were on misdemeanor charges.

Sexual immorality.—A history of sexual immorality, while living in the married state, was obtained in the case of 2 fathers and 2 mothers. A history of commercial prostitution was obtained in the case of 3 mothers.

Families.—The following number of children, living and dead, were produced by the 95 families from which the 100 subjects of this study came—living, 398; dead, 153; total, 551. Families varied in number from 1 to 15 children. No conclusions could be drawn as to any relation between the size of families and any tendency toward prostitution; the hardened prostitute was found as an only child as well as in families of 5, 7, and 12 children.

2. Personal Histories.

Personal history was obtained from the subject in all cases, and supplemented by information in possession of the police court matron. In only 2 instances did the writer have the opportunity of interviewing near relatives. Inquiry under this heading included age, birthplace, physical condition, with particular reference to mental and nervous disorders, alcoholism, drug habituation, and various acts of an antisocial nature that may have been committed.

It was in this field of inquiry, and in that of social history, that most untruthfulness was encountered, the information as given ranging all the way from frank and truthful statements to an absolute denial of any sexual immorality, even when the subject was confronted with what might fairly be regarded as incontrovertible evidence of guilt.

In regard to reliability of statement by these delinquents, it is believed that the 100 cases may be roughly divided into 3 groups: First, those who gave what was apparently approximately the whole truth in regard to their histories as determined by cross-questioning and the records of social agencies, numbering 19; second, those who gave partly reliable information, but with considerable apparent attempt to cover up or deny sexual immorality or other antisocial conduct, numbering 33; and third, those who denied any sexual immorality or whose statements were so indefinite as to be clearly unreliable in this respect, numbering 48. Three individuals who did not cooperate well were not considered further from this standpoint.

Factors tending to make the statements of these subjects unreliable seem to be faulty observation, traceable both to intellectual defect and to a lack of proper interest in the various events of their lives; fear that the information given would affect their period of detention; possibly a certain amount of resentment at inquiry into such intimate

personal affairs; and the desire, common to us all, to minimize defects and failures.

Age at loss of parents.—The following table gives the number of subjects in each age group at the time of losing father, mother, or both, by death, or separation:

TABLE XVIII.—*Age of subjects at time of parents' death or separation.*

Age of subject, 5-year groups.	Number of subjects whose mother was dead.	Number of subjects whose father was dead.	Number of subjects both of whose parents were dead.	Number of subjects whose parents were separated.
5 years.....	7	5	6	4
5-10.....	3	4	11	4
11-15.....	2	2	13	2
16-20.....	3	5	19	2
20-25.....	2	1	23	1
25 and over.....			24	

One subject reported desertion by father when she was 2 years of age; one desertion by both parents when only a few weeks old. Four had had stepmothers in their early years; 11 had stepfathers. Nine had been adopted into families; 7 had spent periods varying from months to years in orphanages.

Age at time of examination.—The women examined ranged from 17 to 52 years of age, the majority being between 18 and 24 years. The number at each age is shown as follows:

TABLE XIX.—*Age of subjects at time of examination.*

Years.	Number.	Years.	Number.
17.....	1	30.....	2
18.....	7	31.....	1
19.....	5	32.....	1
20.....	8	33.....	3
21.....	10	34.....	1
22.....	8	36.....	5
23.....	6	39.....	2
24.....	10	41.....	1
25.....	5	42.....	3
26.....	3	43.....	2
27.....	5	44.....	1
28.....	5	52.....	1
29.....	4		

Birthplace of subjects.—As in the case of the parents, the subjects were chiefly natives of the State; 12 States other than Kentucky and 1 foreign country were represented; 1 subject did not know her birthplace.

TABLE XX.—*Birthplace by State and country.*

Kentucky.....	60	Virginia.....	1
Indiana.....	13	Oklahoma.....	1
Tennessee.....	6	Alabama.....	1
Missouri.....	4	Iowa.....	1
Ohio.....	4	New York.....	1
Texas.....	2	Illinois.....	2
Louisiana.....	2	Ireland.....	1

The 46 women who came from farming districts stated that they left the farm at the following ages: Nine left when between 10 and 14 years; 20 when between 15 and 20 years, and 17 when more than 20 years.

3. Social History.

The following section gives certain information of a sociological nature gathered in conversation with the subjects themselves and supplemented from court records. The data secured are reported under such headings as civil status, school history, occupation, and court history—previous arrests as well as present charges.

Civil status.—There is given below the information available regarding the civil status of the 100 women at time of the examination.

TABLE XXI.—*Marriage record.*

Marriages:	
Married once.....	56
Married twice.....	18
Married three times.....	1
Single.....	25
Results:	
Separations.....	55
Divorces.....	4
Divorced from one husband, or separated from one.....	4
Husbands dead.....	8
Considered as still living with husband.....	4

Among 64 of these women there had been 151 pregnancies, these pregnancies resulting in 63 children now living, 39 dead, 43 miscarriages or abortions, and 4 stillbirths. Two were pregnant at the time of the examination. Seventeen of these pregnancies occurred in women who were either single or not living in wedlock. Although the majority of these women becoming pregnant became so only once or twice, it is of interest to note that one woman, aged 42, who had been an alcoholic prostitute for the past 10 years, was the mother of 4 living and 6 dead children. Also one woman, aged 34, who had for some time been alcoholic and had conducted a disorderly house, was the mother of 7 living children.

Occupations of the husbands of the women married were reported as follows:

TABLE XXII.—*Occupation of Husbands.*

Laborer.....	36	Fireman (R. R.).....	1
Farmer.....	7	Conductor (R. R.).....	1
Mechanic.....	6	Policeman.....	1
Soldier.....	4	Bartender.....	1
Molder.....	4	Salesman.....	1
Teamster.....	3	Mail carrier.....	1
Chauffeur.....	2	Pool-hall manager.....	1
Carpenter.....	2	Restaurant keeper.....	1
Factory worker.....	2	Real estate dealer.....	1
Coal miner.....	2	Cook.....	1
Plumber.....	2	Harness maker.....	1
Electrician.....	2	Blacksmith.....	1
Painter.....	2	Enameler.....	1
Box maker.....	2	Unknown.....	3
Tinsmith.....	1		
Printer.....	1	Total.....	95
Foreman (R. R.).....	1		

Thirty-nine husbands were said to have been addicted to the excessive use of alcohol, 2 were addicted to the use of morphine, 1 used both alcohol and morphine, and 1 used alcohol, morphine, cocaine, and heroin.

School record.—Seven of the women could not read or write. Of these, 1 stated that she had never attended school; the other 6 had attended schools for periods varying from a few weeks to a few years. Twenty-two could read and write only and in most instances could do that but poorly.

The number attaining various grades in school was thus reported:

Third grade.....	6
Fourth grade.....	11
Fifth grade.....	15
Sixth grade.....	8
Seventh grade.....	11
Eighth grade.....	11
Ninth grade.....	1

Three entered the first year of high school, 3 entered the second year, 2 completed the high-school course and took courses in business schools. One claimed to have been a student nurse in a training school for two and a half years but gave up the course because of a "nervous breakdown." Forty-five stated that they always disliked school. Arithmetic was by far the most difficult school subject, with geography and history holding second and third places of aversion.

Probably well over 50 per cent of these persons attended country schools in a section where the school standards were very inferior. This absence of adequate schools and the defective mentality of the individuals play varying and, in many cases, indefinable parts in the resulting lack of education and the life history of the subject.

It is considered worthy of note that 3 individuals, who were immoral prior to entering a convent, spent therein 3 years, 4 years, and 6 years, respectively, and shortly after leaving the convent became street prostitutes. These were defective or inferior persons, and 2 were considered as such while in the convent. The long period spent in a religious atmosphere probably explains the Bible reading and praying by these women frequently observed while they were in jail—doubtless a regressive phenomenon in the face of a difficulty.

Occupation.—The following table sets forth the occupations represented and numbers engaged in each:

TABLE XXIII.—*Occupation of the women.*

Factory worker.....	36	Milliner.....	2
Domestic.....	24	Cash girl.....	2
Waitress.....	15	Musician (piano).....	2
Housework at home.....	9	Wrapper (department store).....	1
Laundress.....	5	Bookkeeper.....	1
Seamstress.....	2	Stenographer.....	1

While practically all the women had changed their occupations frequently, performing various kinds of work at different times, the list above fairly represents their capabilities when engaged in legitimate occupations. At intervals, practically all of them had relied on sexual immorality for their support. Twenty-eight had depended wholly on prostitution as a means of livelihood for relatively long periods of time.

As to wages received for legitimate employment, 81 per cent made \$10 or less per week; 15 per cent made between \$10 and \$15 per week; and 4 per cent made between \$15 and \$25 per week.

In regard to sexual immorality, these women can be roughly divided into 3 groups: First, those who had for varying periods of time been inmates of regular houses of prostitution, numbering 20. In this group there was 1 woman, age 44, who gave a history of having been in a licensed house 21 years previously; second, those who had confined their activities mainly to street soliciting, numbering 28; and third, those who were more or less intermittently immoral, depending on an occupation or a husband for support during intervals. These numbered 52.

Court history.—It will be recalled that the subjects of this paper were under detention chiefly in the Jefferson County jail, though a few came from hospitals or homes in the city of Louisville. They were detained in quarantine for the treatment of venereal infection, or held upon other charges, their infectious condition being later discovered. The reasons for their detention, with the number held upon each charge, are thus shown:

Court charges and number detained under each charge.

Disorderly conduct.....	61
Quarantine.....	21
Drunkenness.....	6
Conducting disorderly house.....	4
Grand larceny.....	2
Petit larceny.....	1
Breach of peace.....	1
Forgery.....	1
Begging on streets.....	1
Contempt of court.....	1
Illegitimate pregnancy.....	1

The term "disorderly conduct" as applied in the Louisville police courts covers street soliciting and other actions relating to prostitution.

Those women arrested on the other charges were either engaged in prostitution, or had some relation thereto, or had lived with men while not married, with the exception of 1 woman arrested for drunkenness, of whom it could not be definitely proved that she had engaged in sexual immorality, although this was strongly suspected

by the husband and by a social-service worker who had seen the woman in jail on a previous occasion.

The available records showed, or the individuals themselves admitted, previous arrests as follows:

Number of previous arrests:	Number of individuals.
1.....	21
2.....	9
3.....	4
4.....	2
5.....	2
6.....	3
9.....	1
17.....	1
"Several".....	4

In this connection it is believed that it will be of interest to give a résumé of the histories of 2 of these individuals. The subject referred to in the above table, as having had 9 prior arrests, gave the following history:

Her father, a laborer, was an alcoholic and could neither read nor write. The mother could barely write her name and is said to have been "nervous." Two brothers, both laborers, were also alcoholic. One had been arrested for stealing, and about 4 years previously had killed the subject's husband in a drunken brawl. Of the 4 sisters, 2 had spent time in an industrial school, one is alcoholic, and the other has had convulsions frequently during the greater part of her life. Three of the sisters, including the subject, can read and write; the others can not do either. They are all married.

The subject herself was born on a farm in Kentucky, is 32 years of age, and has lived in the city of Louisville since the age of 10. It seems that she attended school very little, although the reason for this is not clear, and she barely learned to write her name. As a child she is said to have had "St. Vitus dance" and to have walked in her sleep. At 15, she married a laborer, an alcoholic, who was killed 4 years before this study was made. The subject herself served a sentence of 1 year in jail as an accessory to the murder. She has worked at times as a domestic and in various factories.

Shortly after completing the above-mentioned jail sentence, she married a laborer, who was a drug habitué, and a thief, with whom she lived for about a month. She stated that she had been drinking heavily for about 4 years, and the police matron's records showed that she had been arrested 9 times during the past 18 months for drunkenness and disorderly conduct. She has 3 children living and 4 dead. She made a Binet age of 8.4 years. Her Wassermann test was negative, but she was found to be infected with gonorrhea.

The following history is that of the person noted in the above chart as having been arrested 17 times:

Her father was an alcoholic laborer who could neither read nor write, although the cause of his illiteracy is not known. The mother could neither read nor write, had convulsions frequently after the age of 12, and gave birth to 2 children prior to her marriage. The subject knows nothing of these 2 half-sisters except that they are living and married. She had 1 sister who had convulsions and died at the age of 19.

The subject herself lived on a farm until about 4 years previous to these studies and has since lived in Louisville. She claims to have attended school for 4 terms, but says

she was often a truant. She can now read and write, but poorly. She thinks she had spasms in childhood, and has had attacks of unconsciousness frequently during most of her life. She has a violent temper and is combative when angry. She has worked at times as a domestic and waitress, but has followed mainly the life of a street prostitute during the past 3 years. She states that she used morphine for 2½ years, but has used none during the past 3 years. During the past year she has been markedly alcoholic.

At the age of about 17 she killed a man by striking him on the head with a hatchet after he and her father had had a fight. For this crime she served 9 months in the penitentiary. At 21 she married a laborer, an alcoholic, and was arrested once for attempting to cut his throat. Her other arrests were on charges of drunkenness and disorderly conduct. She has 1 child living. She made a Binet age of 8.8 years. In May, 1918, her blood Wassermann was 4 plus, and she was found to be infected with gonorrhea.

These cases illustrate the very ineffective way in which the courts often handle our defectives. The early and permanent segregation of such persons would do much to prevent the spread of venereal diseases, lessen crime, and save the community the burden of worthless offspring.

In connection with the legal phase of these cases, the following brief record of a case is given as illustrating the difficulty in committing defectives to institutions under the present laws and practices in some States:

A woman, aged 19, single, was arrested on the streets on the night of July 5, 1918, for disorderly conduct and lodged in jail. At the time of the examination she stated that she had attended a country school between the ages of 7 to 14, but she could barely read and write. She had lived on a farm until 3 days prior to her arrest, when she came to Louisville with another woman. They lived in a Salvation Army house for 3 days, then went out on the streets, met 2 soldiers, with whom they had sexual relations, and were arrested on the same night.

At the jail she was found to have gonorrhea and gave a 3 plus Wassermann reaction, for which she was quarantined. Ordinary conversation showed her to be a defective. She made a Binet age of 7.3 years, although her general manner was rather natural. Her 2 sisters were said to have had illegitimate children and to have been considered defective by their neighbors.

While the subject was held under quarantine an attempt was made to secure her commitment to an institution for the feeble-minded. A man who had taken an interest in her while she was in jail secured a capable lawyer to handle her case, and a jury hearing was demanded for her. The jury decided that she was not feeble-minded.

Such cases are striking examples of the need of the psychiatrist for the proper handling of delinquent persons.

In addition to those persons of this group who had previously been actually arrested, there were 19 others who had been for some time under the observation of the various Louisville social agencies.

4. Physical Examinations.

A complete general physical examination was carried out in each case. One or more blood Wassermann tests were made in each case. One or more urethral and cervical smears for gonococci were made in all but one of the cases. Spinal fluid Wassermann tests were done

in 3 cases, and in 1 case the spinal fluid was subjected to Wassermann and globulin tests and cell count.

Nutrition.—The correct average of weight in relation to height is given by Butler as follows:

TABLE XXIV.—*Standard of height and weight* (Butler).

Inches.	Pounds.	Inches.	Pounds.
57	109	63	130
58	111	64	135
59	113	65	140
60	115	66	145
61	120	67	150
62	125		

At the time of the examination 95 of the women were regarded as having fair or good development, 5 as having poor development. Eighty-five were regarded as having fair or good nutrition and 15 were considered as being in a poor state of general nutrition. Of these 15 individuals, 9 had both syphilis and gonorrhea, 2 had signs of pulmonary tuberculosis, 1 had pulmonary emphysema, several had been users of alcohol, morphine, and cigarettes to excess, and several had badly decayed teeth, with pyorrhea.

According to Van Noorden, states of nutrition may be designated as "emaciated," "underweight," "medium nutrition," "stout," "slightly obese," and "extremely obese," depending upon the relation of weight to height.

The following table gives the number of persons falling in these various groups:

TABLE XXV.—*Nutrition record.*

State of nutrition:	Number.
Emaciated (33 or more pounds below average weight).....	0
Underweight (14 to 33 pounds below average weight).....	22
Medium nutrition (11 pounds above to 14 pounds below average weight)....	58
Stout (11 to 33 pounds above average weight).....	12
Slightly obese (33 to 55 pounds above average weight).....	8
Extremely obese (55 or more pounds above average weight).....	0

Skin conditions.—One subject had a general syphilitic eruption of the macular type; 1 had a fading urticarial eruption; and 1 had a patchy alopecia, dating from a recent attack of influenza. Three individuals had tattoo marks, 2, on the arms, and 1, on the thigh. Two showed scars about the neck, evidently from tubercular glands in childhood. Three showed hypodermic needle scars on the upper extremities.

Hearing.—The conditions listed below resulted in defects ranging from slight loss of acuity of hearing to complete deafness in the ear involved.

TABLE XXVI.—*Type and number of cases of defective hearing.*

	Left.	Right.
Chronic catarrhal otitis media.....	1	4
Acute catarrhal otitis media.....	3	.....
Double otitis media, catarrhal chronic.....	1	.....
Double otitis media, catarrhal acute.....	1	.....
Double otitis media, suppurative, healed, with defective hearing.....	2	.....
Otitis media, suppurative, healed, with defect in hearing.....	.....	1
Otitis media, suppurative.....	2	.....

One individual had had suppurating otitis media for 29 years.

Vision.—Refractive errors were present in 42 persons, the majority of which were of a minor degree, apparently unknown to the subjects and not interfering with their occupation. Two of these cases had such a high degree of myopia that correction was unsatisfactory. Ten cases were corrected to practically normal vision. One case of central corneal opacity and 2 cases of strabismus were found.

Respiratory system.—The following conditions involving the respiratory system were found:

TABLE XXVII.—*Respiratory defects.*

	Cases.
Deflected nasal septum.....	2
Nasal polypi.....	3
Chronic pharyngitis.....	19
Bronchitis (acute).....	3
Pulmonary emphysema.....	2
Probable pulmonary tuberculosis.....	5

The last five persons listed in the above table were regarded as probably tuberculous, on the following physical signs; persistent moist râles, change in breath and voice sounds, which were present at one apex in 2, and at both apices, in 3 individuals. Two of these persons had formerly been pronounced tuberculous, 2 were regarded as doubtful cases of pulmonary tuberculosis, and 1 had spent several months in a tuberculosis sanitarium a few years previously and probably had a healed lesion at the time of this examination. In no other instance were suitable specimens of sputum obtained for laboratory examination.

Measures of chest expansion gave the following results:

Expansion in inches:	Number.
$\frac{1}{2}$	1
1.....	26
1.5.....	49
2.....	22
2.5.....	2

The individual having only one-half inch expansion was a woman of 52, with well-marked pulmonary emphysema. The lack of normal expansion in others is probably explainable as due to indoor lives,

lack of proper physical exercise, and probably partly to poor development.

Focal infections and the gastrointestinal system.—In 5 persons the teeth were in good condition—that is, they were clean, not more than 1 tooth was missing, and all carious areas were properly filled. In each of the other 95 persons there were present usually several badly decayed teeth, or several teeth missing, and there was other evidence of a lack of dental repair and the use of the toothbrush. A condition that could be definitely designated as pyorrhea alveolaris was present in 42 persons. Daily use of toothbrush was reported by 18 subjects; occasional use by 47; 35 said they never used the brush.

Enlarged tonsils were present in 15 persons, and enlarged tonsils needing surgical treatment were present in 6.

In two individuals the presence of chronic anal fistulæ was noted. One person had been operated upon for appendicitis.

Circulatory system.—The main disorders discovered in the circulatory system were cardiac lesions and relatively high blood pressure. Results of the blood Wassermann tests are given in Table XXX.

TABLE XXVIII.—*Cardiac disorders and accompanying conditions.*

Disorder.	Number of cases.	Accompanying conditions.
Mitral regurgitation.....	1	Woman of 20; enlarged tonsils; recent attack of influenza.
Double aortic and mitral lesions.....	1	Woman of 42 with 4 plus blood Wassermann reaction.
Hypertrophy.....	1	Pulmonary emphysema in woman of 52 years.
Probable myocardial changes.....	1	Woman of 34; alcoholic with syphilis; pale; dyspnoeic on exertion.
Thickening of radial arteries.....	2	1. Alcoholic woman who appeared to be 45 or 50 years of age but gave her age as 36. 2. Alcoholic prostitute of 44, who gave a history of syphilitic infection 12 years ago.

Nine women were found to have a systolic blood pressure of 100 mm. or less and a diastolic blood pressure of 72 mm. or less. The factors that seemed to have a relation to this condition of low pressure were poor physique, indoor life, syphilis, alcohol, and tuberculosis. In all these persons the general state of nutrition was poor, a fact for which their diseases and habits of life were probably responsible.

TABLE XXIX.—*Blood pressure and accompanying conditions.*

Pressure.		Accompanying conditions.
Systolic.	Diastolic.	
140.....	50.....	Woman of 42. Alcoholic, syphilitic, double aortic lesion and mitral regurgitation.
145.....	95.....	Woman of 29; prostitute for 14 years. Alcoholic; 1 plus Wassermann.
180.....	110.....	Woman of 52. Pulmonary emphysema and cardiac hypertrophy.

The systolic blood pressure was found to measure from 100 to 120 mm. in practically all other individuals with a diastolic pressure of about 50 mm. or less. In 23 persons one or more groups of superficial lymph nodes were sufficiently enlarged to be felt. One suppurating bubo was found.

There are given in the following table the results of the Wassermann tests performed on subjects during the months of January, February, March, and April, 1919:

TABLE XXX.—*Wassermann tests.*

	Negative.	1 plus.	2 plus.	3 plus.	4 plus.
Number of subjects.....	57	6	8	8	21

Of the 57 women giving negative Wassermann reactions, 4 gave a definite history of syphilis, 1, 12, 16, and 21 years previously, respectively, with subsequent treatment; 4 had had 4 plus Wassermann reactions during the previous 10 months; and 1 had been a street prostitute for several years, giving a 1 plus Wassermann reaction 4 months previously.

Of the 6 women giving a 1 plus Wassermann reaction, 1 had a 4 plus reaction in July, 1918, 1 had been under treatment for syphilis for about 4 months, and 4 were known to have been alcoholic prostitutes for periods of from 1 to 14 years.

Of the 8 women giving a 2 plus Wassermann reaction, 1 had definite syphilis 4 years ago, 1 had a 4 plus Wassermann reaction in November, 1918, 1 had a primary lesion on the lip, and 1 had well-marked secondary symptoms at time the test was made. One gave a history of a stillbirth about 24 years previously, followed shortly after by 2 miscarriages with no further pregnancies, 1 was a feeble-minded girl taken into custody at a local railroad station, and 2 were alcoholic prostitutes.

There seems to be no doubt that those cases giving either a 3 plus or 4 plus Wassermann reaction had syphilis. Therefore, out of the total of 100 women there were 48 in regard to whom no evidence of syphilis could be found in history, physical examination, or Wassermann reaction. It seems that this relatively high percentage of women presumably not infected is explainable on the grounds that a considerable number of the women examined engaged in prostitution only occasionally, depending mainly on some legitimate occupation for a living, although there were three in this negative group who had engaged solely in prostitution for from 1 to 6 years. The possibility of a temporarily negative reaction should also be considered.

Genito-urinary system.—In determining the presence of gonorrhea,¹ smears made from the cervix and urethra and stained by the Gram method, were depended upon. The results were as follows:

Smears showing presence of gonococci.....	81
Smears regarded as doubtful.....	2
Smears not showing gonococci.....	16
Smear not made.....	1
Venereal warts.....	3
Persons presenting evidence of tubal infection.....	2

During a period of 5 years prior to this examination, 7 women had had pelvic operations, presumably for tubal infections due to the gonococcus in 6 cases and following an abortion in 1 case. Leaving out the doubtful case of operation following an abortion, 10.1 per cent of those presenting definite evidence of gonorrhea had had tubal involvement at some time during the course of the disease.

Among those subjects regarded as presumably not infected with gonorrhea, there were 3 women who had been engaged in prostitution almost continuously for 6, 8, and 14 years, respectively. It hardly seems possible that these women had escaped infection; rather, it is probable that the organisms were not found on one examination—a surmise in accordance with the common experience of finding positive and negative smears alternating, when examining smears for release of persons from detention.

The findings just given indicate that gonorrhea in the female is in many cases a symptomless disease, except in the event of tubal infection or other less common complications.

Nervous system.—Irregular pupils, with considerably diminished reaction to light, were found in a woman 44 years of age, who had engaged in prostitution intermittently for 21 years, had been heavily alcoholic, and gave a history of having contracted syphilis 12 years previously. At the time of the examination her blood and spinal fluid Wassermann reactions were negative, globulin negative, with 10 cells per cm. in spinal fluid.

Irregular pupils, with considerably diminished reaction to light, were found also in a woman 32 years of age who had been heavily alcoholic for at least 2 or 3 years. She had had several children born at term, no miscarriages, no history nor evidence of syphilis, and her blood Wassermann reaction was negative. Spinal puncture not done. This is probably another case in which alcohol was the cause of pupillary changes.

The left pupil was contracted and irregular, and the reaction to light diminished in both pupils in a woman 39 years of age, who stated that she had contracted syphilis 21 years previously, and acknowledged having been “moderately” alcoholic for many years.

¹ For findings in syphilis, see p. 1231.

At the time of examination she had a negative blood Wassermann reaction. Spinal puncture not done. No other neurological signs.

A small left pupil, with diminished light reaction, was found in an alcoholic woman 36 years of age, who had a negative blood Wassermann reaction. Spinal puncture not done.

The left pupil was small and irregular, with diminished reaction to light and accommodation, the right pupil showed poor reaction to light in a woman 26 years of age, who had been a prostitute for 8 years, had contracted syphilis 5 years previously, and at the time of examination had a 4 plus Wassermann reaction in blood serum. She had used morphine for 3 years, and had drunk whisky heavily for the past year. No other neurological signs. Spinal puncture not made.

The cause of pupillary changes (left pupil small and irregular, with diminished reactions to light) was not clear in the case of a woman 43 years of age, who began drinking heavily 10 or 11 years previously, and 3 years later began having pains in extremities, was in bed 2 months, "out of her head" at times, and had difficulty in walking for several months because of numbness in lower extremities. At the time of examination there was a total absence of patellar reflexes; diminished left Achilles reflex; senses of touch and pain seemed normal. Blood Wassermann reaction 4 plus; spinal fluid Wassermann negative; globulin test and cell count not made. Probably a case of old multiple alcoholic neuritis.

General.—Other physical conditions present were exophthalmic goiter, of which sufficient signs were present in 2 persons to make reasonably sure the diagnosis of hyperthyroidism of a mild type. Simple thyroid enlargements, with no evidence of oversecretion, were present in 5 persons. Speech defects were present in 3 persons. Syphilitic periostitis of tibia was found in 1 case. Residuals of old phlebitis of lower extremity were found in 1 instance. One individual had had the right thigh amputated at the middle, at the age of 11 years; 1 had an old ununited fracture of the clavicle.

Alcohol and drug habits.—Thirty-four subjects gave a history of steady drinking over considerable periods, or spree drinking; 27 gave a history of drinking small amounts of liquor "occasionally," but of never being intoxicated; and 30 denied the use of alcohol at any time. Seven had used both alcohol and morphine, at times simultaneously, at times alternately. One gave a history of having used morphine, cocaine, and alcohol; one, alcohol and paregoric. Seventeen were addicted to the use of cigarettes.

It seems certain that at the time of the examination, none of these persons was using narcotics. Their discontinuance of the habit seems in almost every case to have been directly the result of the anti-narcotic laws recently put into effect.

It was rather surprising how easily those who were addicted to the use of drugs got along without them when they realized that it was practically impossible to obtain a further supply.

4. Mental Examination.

There are set forth below the results of the psychometric examination, carried out in accordance with the Goddard revision of the Binet-Simon scale. These tests were supplemented by questions of wider scope covering the subjects' general knowledge.

In the following table each individual is recorded as making that Binet age to which she came the nearest; for example, one making a Binet age of 10.6 years would be recorded as making 11 years.

TABLE XXXI.—*Record of Binet tests.*

Chronological age.	Tested mental age (years).					
	7	8	9	10	11	12
17 to 20.....	1	2	7	2	4	5
21 to 25.....		4	10	4	9	12
26 to 30.....	1	3	4	2	2	7
31 to 35.....	1	1			2	2
36 to 40.....	1	1	1	1	1	3
41 to 45.....		2	1		2	1
46 to 55.....						1
Total.....	4	13	23	9	20	31

Arranged in different form, the results can be shown as follows:

	Number of subjects.
Of Binet age under 10 years.....	40
Of Binet age of 10 and under 12.....	29
Of Binet age of 12 years or more.....	31

For the purpose of grouping these 100 subjects from a psychiatric standpoint, the following classification was adopted:

TABLE XXXII.—*Psychiatric classification.*

	Number of cases.
Feeble-minded.....	38
Constitutional inferiority.....	43
Epileptic with intellectual deficiency.....	1
Allied to epilepsy.....	2
Dementia praecox.....	1
Normal (probably).....	7
Unclassified.....	8

Those classified as inherently feeble-minded were so diagnosed only after a consideration of all the available facts in connection with each individual, including early environment, educational opportunities, medical history, physical examination, general and

any special knowledge, with all information obtained from the Binet-Simon examination.

The Binet ages of these 38 feeble-minded persons ranged between 7 and 9.6 years. In this group several persons were the subjects of syphilis, several had been more or less addicted to the use of alcohol, and 1 had been a morphine habitué; but it is not believed that these factors played any important rôle in determining their present intellectual status. The group included 4 pairs of sisters, and 1 individual whose sister was classified as constitutionally inferior.

The relative incidence of gonorrheal infection, and alcohol and drug addiction, was slightly lower in the feeble-minded than in those classified as constitutionally inferior, while the incidence of syphilis was equal in the two groups.

Those individuals classified as constitutionally inferior or of psychopathic constitution came from environments which might be considered to range from fair to good, from which might be expected to come average citizens. However, all these persons apparently were indifferent in school work, more or less inefficient in their occupations, with rather frequent changes for no very good reason, and often idle for varying periods. All showed at one or more times in their lives bad social reactions, such as prostitution, alcoholism, drug addiction, thievery, forgery, neglect or desertion of children, and certain other offenses. They showed a changeability and irresponsibility, with a certain lack of foresight and judgment. On the Binet-Simon scale their mental ages ranged from 10.2 to 12 years.

It is probable that in this group belong many of the so-called "degenerates," but it seems better to consider such persons as having some degree of defect in development, rather than as having degenerated. Two individuals in the above group had recently been given a Binet examination by a psychologist and had been graded as "mentally normal" merely on the basis of making a grade of 12 years or more. Both of these individuals had been prostitutes for several years. They were addicted to the use of morphine and alcohol, and paregoric and alcohol, respectively. Each had been arrested more than once. One had served a term for grand larceny and the other for petit larceny.

It is believed that these cases well illustrate the necessity that those persons who carry out only psychometric tests confine themselves to merely a statement as to their findings in this respect, rather than attempt any general statements as to the subjects' mentality.

5. Types of Personality.

One subject was classified as a case of epilepsy, with defect. Her mother and sister had had convulsions for many years, and the subject herself had had spasms in childhood, and later suffered frequent losses of consciousness. She displayed a marked inability to learn well at school and had a violent temper, having once killed a man by striking him in the head with a hatchet, and at another time having been arrested for trying to cut her husband's throat. She made a Binet age of 8.8 years.

Two subjects were classified as cases allied to epilepsy, on the ground of egoistic make-up so marked as to have interfered with normal adjustment practically all their lives. They probably were both somewhat subnormal intellectually.

One individual was classified as a case of dementia præcox. Her father was alcoholic, sexually immoral, and had been twice admitted to a State hospital with what were apparently manic attacks. A sister had also been in a State hospital with a maniclike attack. The subject herself, 17 years of age, had reached the second year of high school, where she was an average student. About one year previous to our examination she was said to have had a "break-down," that is she gave up her work, was quiet and self-absorbed, and at times irritable, but the mother could give no more details. About eight months later, immediately after her marriage, she was said to have been very "talkative and argumentative" for a time. These attacks seem to have been a depression and elevation, respectively, but we know too little to be confident about their exact nature. During this period she was caught practicing some sexual perversions on her 15-year-old brother-in-law. She gave a history of having been first sexually immoral about the age of 16. She was married about November, 1918, to a soldier, and when he returned to camp she went part of the way with him. After separation she fell in with some soldiers on the train with whom she drank and was sexually intimate. Then followed a period of about two or three months in which she engaged in prostitution, often practiced perversions, was at times alcoholic, and was arrested three times. It seems quite probable that during this period of excesses she was in a mild manic-like excitement, but this is not definitely known. At the time of this examination she was already in jail and was, no doubt, mildly elated. She was alert, quick, smiling, and spontaneously talkative, but quite clear and accurate in all her statements.

After being in jail a few days she was found to have gonorrhea. When she realized that an indefinite and probably long period of quarantine lay before her, she worried a good deal, and in a few days developed a quite marked maniclike attack. During this

attack she gave vent to much crude sexual material, many infantile ideas, prominent among which was a belief that she was pregnant by a negro, upon whom she had practiced fellatio, and later this colored fetus had changed into a blackbird and gone out from her body. Much of her scattered and symbolic productions were understandable in connection with the clear history she had given prior to the full development of the psychosis. After having been under observation for about a month she was committed to a State hospital as a case of dementia præcox.

In this case we have a person with a bad paternal heredity, herself for many years somnambulistic and the subject of frequent nightmares. Nothing is known in regard to an elation in connection with her immorality at the age of 16, but there occurred two later definite maniclike attacks, during which she engaged in excesses of various kinds, malignant symptoms appearing apparently in connection with the prospect of an indefinite period of detention facing her.

Seven individuals were classified as of probably normal make-up. This classification was made on the basis of the reasonably frank, open personality, with a considerable degree of insight in regard to their situation and position in society, with no evidence of inherent intellectual defect, and this in all cases in the face of unusually bad environment and lack of ordinary opportunities. While these persons presented defective moral reactions in varying degrees, it seems probable that bad environment was the determining factor.

Eight individuals were placed in an unclassified group on account of various interacting factors, which made it impossible to arrive at a fair estimate of personality. Brief comment on certain of these cases may be given here. Two women who were prostitutes were the daughters of prostitutes and had been in intimate contact with their mothers during their early years. They showed no definite intellectual defect. One woman who had been a prostitute had used alcohol for about 12 years, heroin, cocaine, and morphine alternately for about four years, and was the daughter of an alcoholic prostitute. She showed some evidence of intellectual defect, but in the light of her environment and previous alcoholic and drug habits it is believed to be impossible to evaluate properly the various factors influencing her conduct.

Two others of this unclassified group came from environments of ignorance and poverty, with an alcoholic factor in one instance. These two persons did well on intellectual tests. One was made an orphan before she was 4 years of age, after which she lived in an orphanage and with various relatives until about the age of 15 or 16. After that she supported herself in various ways, in later years almost entirely by prostitution. She contracted syphilis five years previous

to this study, had used morphine for three years, and for over a year had drunk heavily. At the time of this study she had a 4 plus blood Wassermann reaction and unequal pupils, which reacted poorly to light. She made a Binet age of 10 years. Here was clearly an end product, concerning whose personality practically nothing could be determined.

Still another individual of the unclassified group, aged 42, gave a poor history of her previous life, made a Binet age of 7.8 years, could barely read and write, had a 2 plus blood Wassermann reaction, negative spinal fluid Wassermann reaction, was slow and dull and slurred test words. Her history included a stillbirth about 24 years previously, followed by two miscarriages, but no other pregnancies. She stated that she had had rather frequent losses of consciousness during most of her life, and during the four years immediately preceding had frequently heard voices speaking of her as "that beggar, that drunkard, thief, and whore." At times she said she cursed people on the streets because of the voices. As a general rule, however, she was not greatly troubled by these hallucinatory experiences. She might be regarded as a feeble-minded epileptic who, late in life, developed auditory hallucinations and whose long-standing syphilitic infection was of uncertain effect, if of any. The alcoholic man with whom she was living was unable to give any information except to confirm her statements in regard to the auditory hallucinations. The case is not clear.

Finally, one woman, unclassified, aged 44, gave a history of early poverty, little educational opportunity, prostitution since about the age of 23, of decidedly alcoholic habits for the past 15 or 16 years, and of syphilis contracted 12 years previously. For this she had had considerable treatment. At the time of the examination she was dull, contradictory, and evidently quite defective or deteriorated. She presented no neurological signs except irregular pupils with sluggish light reaction. She had a negative blood Wassermann reaction, negative spinal fluid Wassermann reaction, globulin negative, and cell count of 10 cells per cm. It was not considered that a Korsakoff's syndrome could be diagnosed, and she seemed most probably an inherently defective person with some deterioration.

Several other types of personality observed may be briefly mentioned at this point. There were 3 individuals who could be regarded as the obtrusive or manic type of personality; that is, they were active, energetic, quick tempered, and were inclined to be quarrelsome and violent while under the influence of alcohol. However, in none of these persons could there be discerned a significant relation between the type of personality and prostitution.

Five individuals examined presented a definitely seclusive make-up, their prominent traits being shyness and backwardness in both

childhood and adult life. They spoke of themselves as always being "nervous," were usually quiet and unsociable except when under the influence of alcohol or drugs, had difficulty in securing and holding positions, had a tendency to have hallucinations, and displayed marked feelings of inferiority.

One individual was observed who might be regarded as a fatuous type of personality. She was not seclusive, and she did well on the Binet examination, yet her conduct had been characterized at all times under observation by a childish lack of judgment and an immature sense of responsibility.

It seems that the feeling of inferiority is found with great frequency in prostitutes, and it probably plays a considerable part in determining the individual to take up prostitution. It may at first seem surprising that a shy and bashful girl would engage in this life; but it is believed that this frequently occurs, and it is probably explainable on the ground that the part of the female in prostitution is so nearly passive and requires the exercise of so little intelligence.

In this study little consideration was given to the statement of any individual as to why she began sexual immorality; practically all such statements probably represent a rationalization rather than the real reason.

(Part III of these studies, dealing with the investigations into the social and environmental factors, which were made by the representative of the Children's Bureau, will appear in the next issue of Public Health Reports.)

WHAT CAN A COMMUNITY AFFORD TO PAY TO RID ITSELF OF MALARIA?

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Upon the intelligent understanding of the financial problem involved in malaria eradication will largely depend the rate of progress with which the malarious sections of the country will be cleared up. In places where health work has been backward the health authorities probably do not realize that the community will tax itself very heavily to be assured of good health, provided it has confidence in the ability of the health authorities to do what they say is necessary to clean up the community. Good health is the greatest human asset. The extent to which this is appreciated by the average man is indicated by the fact that advertising concerns find it profitable to make health the "appeal" in a large percentage of the advertising matter put out. Hugo Munsterberg, in his "Psychology of Business," says: "Psychological experiments in which advertisements with different feeling-appeals were graded by 20 men and 20 women showed on an average that the idea of health appealed to the personality most strongly. Next comes cleanliness * * * ." This is